

Size of Needles and Thread to be Used on Different Materials.

CLOTH.	SIZE NUMBERS OF NEEDLES.	THREADS		
		COTTON.	SILK.	LINEN.
Finest Linens and Silks, Lawns and Nansooks.	No. 2	100 to 200	000	
Handkerchiefs, Collars, Fine Shirts, Underclothing.	No. 3	80 to 100	0 to 00	
Common Muslins, Light Dressmaking and Quilting.	No. 4	60 to 70	A to 0	
Tailoring, Light Clothing and Boys' Clothing.	No. 5	40 to 60	A and B	90 to 100
Heavy Dressmaking, Cloakmaking and Heavy Tailoring.	No. 6	30 to 36	B and C	70 to 80
Extra Heavy Work.	No. 7	20 to 24	D and C	50 to 60

For ordinary work use the **SAME SIZE** of thread in the bobbin as in the needle.

The number of the needle is marked upon its shank.

In ordering Needles specify for **No. 9** Machine and the size numbers.

Use the fine throat plate with needles from No. 2 to No. 5 ; for larger needles the coarse throat plate must be substituted, as the fine one would chafe off the thread.

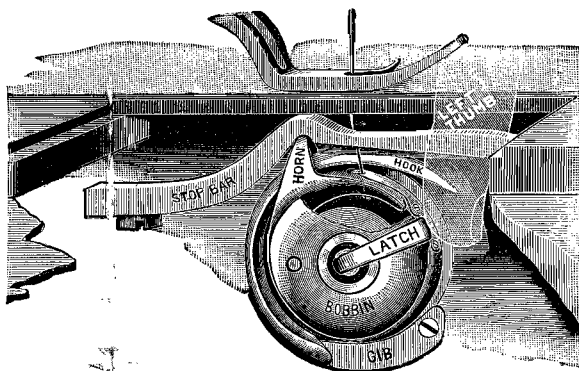
SPECIAL NEEDLES are made for manufacturers of various kinds of work, such as corsets, overalls, rubber-webbing, etc.

To Set the Needle. Loosen the needle set screw, insert the needle with its flat side to the left ; be sure to **PUSH THE NEEDLE AS FAR UP** as it will go, and secure it firmly by turning the set screw with the screw driver.

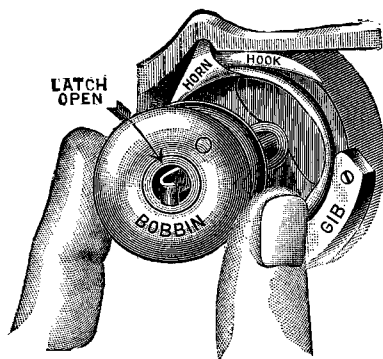
To Take Out the Bobbin.


Remove the left plate slide.

To open the latch easily with the left thumb, have the point of the hook towards you, as shown in the cut. The **LATCH** may be reached with the hand **EITHER ABOVE OR BELOW** the table, the latter being convenient when attachments are in use.



With the ball of the thumb (not necessary to use the finger or thumb nail), open the latch until it stands out straight; then brush the bobbin outward, until it hangs on the latch, for removal.



 For Hand Machine Directions, See page 3.

To Wind the Bobbin Automatically.

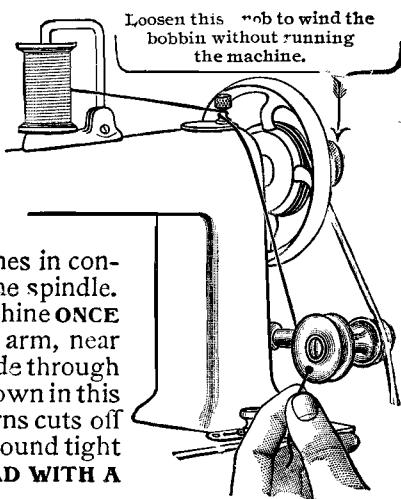
Hold the hand-wheel with the left hand and with the right turn toward you the top of the knob to loosen the pulley so that the bobbin can be wound without running the machine.

Oil the loose pulley through a hole in the hub.

Oil the bobbin winder occasionally.

Swing the bobbin winder until its pulley comes in contact with the belt, and place the bobbin on the spindle.

WIND THE THREAD from the spool on the machine **ONCE AROUND THE ARM CAP SCREW** on top of the arm, near the hand-wheel, and pass the end from the inside through the hole in the bobbin and hold it firmly, as shown in this view, while operating the treadle until a few turns cuts off the thread at the bobbin. The bobbin will be wound tight and even. If necessary, **GUIDE THE THREAD WITH A TOUCH** of the finger.



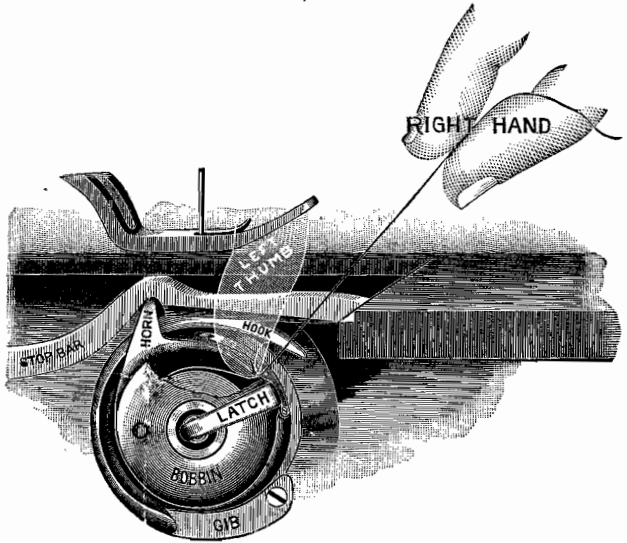
After winding the Bobbin, push down the winder and tighten the pulley securely by turning the knob over from you. **DO NOT FORGET THIS.**

The inside of the bobbin case should be occasionally wiped out with an oiled rag, to remove lint or dirt.

If the bobbin does not revolve with the spindle spread the spindle a little with the screw driver.

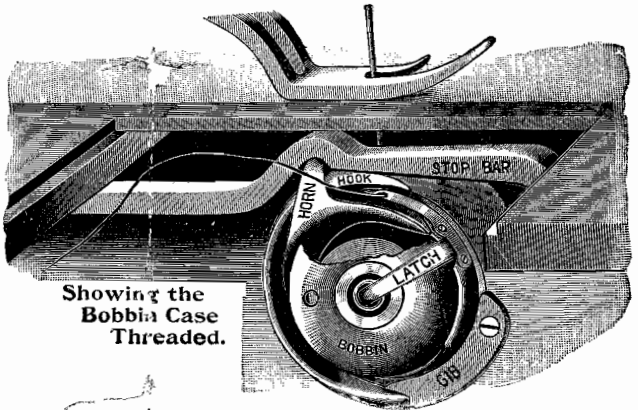
To Place the Bobbin and Thread the Bobbin Case.

Hold the bobbin in the left hand with the thread leading from the top towards you. Hold the end of the thread with the right hand, place the bobbin in its case and close the latch, then, still holding the thread above the latch with the right hand, push the thread with the left thumb down towards you on the edge of the bobbin case until the thread slips into the notch which is just above the latch, and then pull the thread from you until it is drawn up under the notch at the end of the tension spring.



The Bobbin is shown, partly cut away, giving a view of the direction in which the thread should unwind.

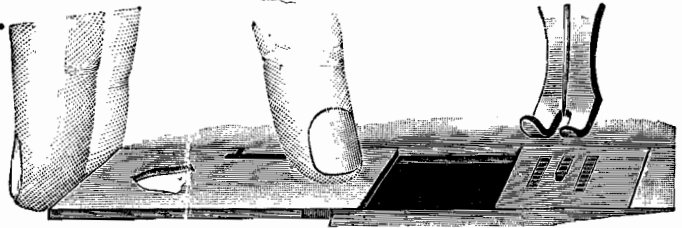
Or, you may place the Bobbin and Thread the Bobbin Case with the Hand under the Machine.



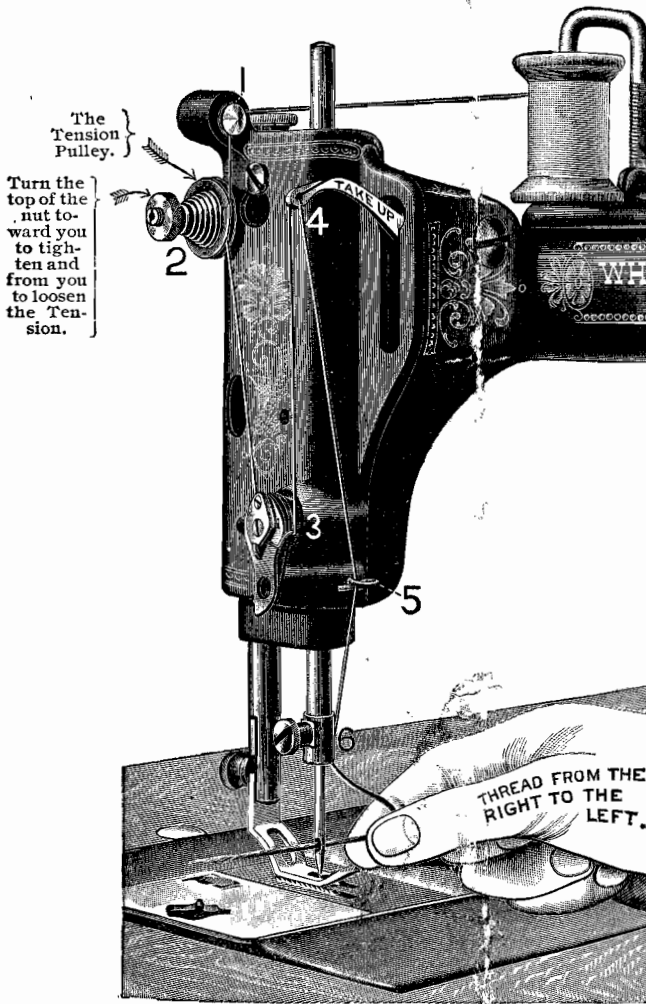
Showing the Bobbin Case Threaded.

To Replace the Slide.

Lay the slide about a half inch on its track in the machine; press on that portion as you push it in. The edge of the slide is filed off so that it can be replaced in this way with ease, as shown in the cut.



If the slide does not stay in position, spring the wing outward with the screw driver.



To Thread the Machine.

Place the spool on the spool wire, which tips back for the purpose, pass the thread under the wire through the thread check (1), down **IN FRONT**, and once around the tension pulley (2), thence under the thread guide (3), through the take-up (4), the thread leader (5), and the needle bar thread guide (6) to the needle. Then thread the needle from right to left, all as seen in the cut, and draw two or three inches of thread through the eye of the needle when the take-up is at its highest point.



Showing Spool Holder Turned Sideways to Hold a Large Spool.

TO USE LARGER SPOOLS than will go on the spool holder, loosen the screw and turn the base across the arm of the machine. Then by turning back the wire, it will hold extra large spools.

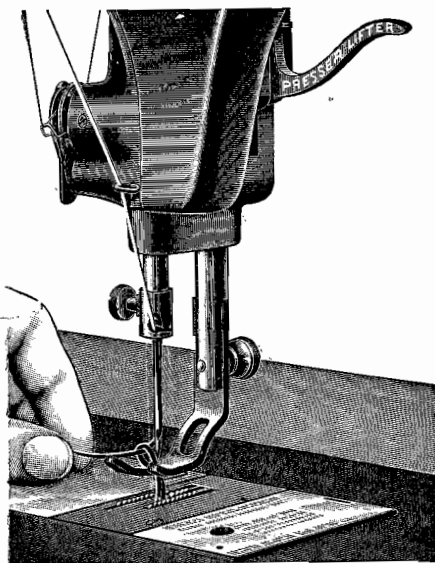
IF THE THREAD KINKS or curls before it reaches the "thread check 1," pass it from the spool, back of the upright wire, thence to the "thread check 1." Silk thread and cheap cotton thread may need this precaution.

Do not let the thread check, or the groove in the tension pulley become clogged with lint, dirt, or knots of thread.

In using fine silk, should it slip around the tension pulley without turning it, wind it twice around the pulley.

To Draw Up the Under Thread.

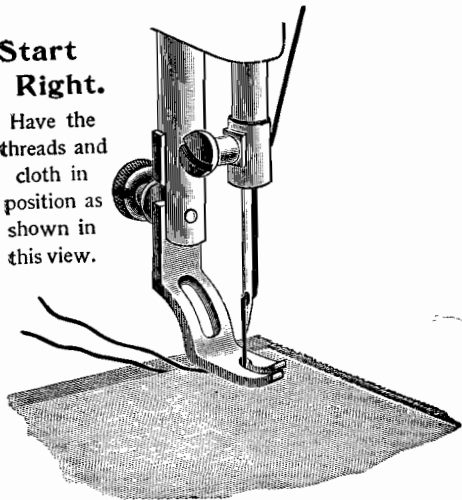
Let the thread extend through the needle two or three inches when the take-up is fully up. Now hold the end of the upper thread **SLACK** and turn the hand-wheel carefully from you while the **NEEDLE GOES DOWN, AND UP, AND DOWN AGAIN TO THE PRESSER-FOOT, WHEN THE TAKE-UP WILL BE AT ITS HIGHEST POINT**; then draw the upper thread, and with it the under thread up through the hole in the throat plate, as shown, and pass them both back under the presser. **BE SURE THAT THE TAKE-UP REMAINS** at its highest point.



Draw up the under thread before putting the cloth under the presser, as shown in this view, to make the stitches perfect from the start.

Start Right.

Have the threads and cloth in position as shown in this view.



To Commence Sewing.

Have both threads passed back, as shown, place the cloth under the presser foot, and let down the presser lifter. Start the machine by turning the hand-wheel over from you.

Do not Pull or Push the work ; the machine moves it.

If it does not, the stitch regulating knob is too far to the left, or the feed is too low, or the pressure on the foot is either too heavy or too light.

The pressure of the presser foot is increased by turning down, or decreased by turning up the presser thumb-screw around the top of the presser bar.

The Length of Stitch is regulated by the knob, at the base of the arm. Loosen the knob by turning it and push it to the right to lengthen, or to the left to shorten the stitch, then tighten the knob firmly.

To Remove the Work. Raise the presser foot. Turn the machine by the hand-wheel UNTIL THE POINT OF THE NEEDLE IN GOING DOWN HAS REACHED THE PRESSER FOOT. THIS WILL LEAVE THE TAKE-UP AT ITS HIGHEST POINT. Draw out the work from you until you can draw the threads into the thread cutter. (If the threads do not draw out easily, the needle is not in the right position, as directed). If the machine is stopped, as directed, the needle will not be unthreaded in starting to sew, even IF ONLY A SHORT END IS LEFT THROUGH THE NEEDLE.

Regulate the Tension of the upper thread by turning the top of the nut toward you to tighten the tension, the other way to loosen it. (See cut on page 4). WHEN THE PRESSER LIFTER IS DOWN THE TENSION CAN BE TESTED BY HAND.

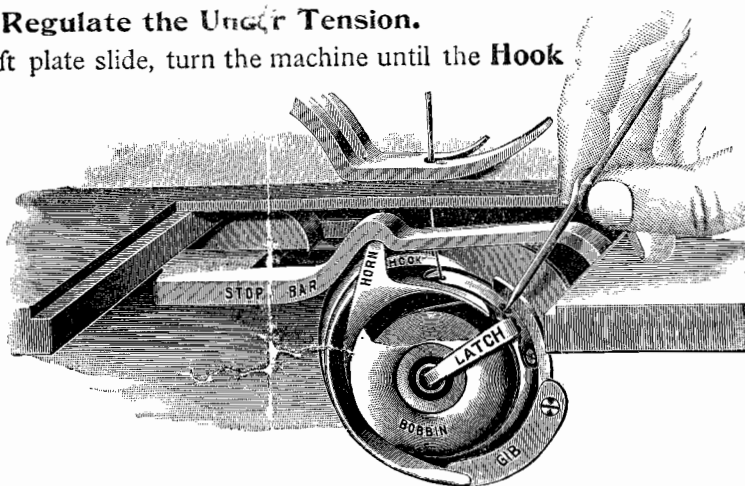
When making a very long stitch, the best tension is obtained by using the coarse throat plate instead of the fine one which is usually in the machine.

For convenience, in taking out the work, the tension of the upper thread is released by raising the presser lifter but is not released by the raising of the presser foot when the lifter is not up as by thick goods or seams passing under the foot. Do not try to adjust the upper tension when the presser lifter is up.

To Regulate the Under Tension.

Remove the left plate slide, turn the machine until the **Hook** points towards you, and the **Gib** is below the latch.

The Tension is Regulated by the screw in the center of the spring, above the latch. With the small screw-driver turn this screw one quarter or one-half around to the right to tighten, or to the left to loosen the tension, as shown in this view.




The Under Tension, when once regulated, will **RARELY REQUIRE ANY CHANGE**. Thereafter the proper relation of upper and under tension should be produced by changes of the upper tension only.

In sewing seams where strength is required, the tension should be alike on both threads, in order that the lock may be in the center of the goods,

thus : 

If the lower thread lies straight on the underside of the goods, the under tension is too tight or the upper tension too loose.

thus : 

If the upper thread lies straight, thus :  the upper tension is too tight, or the lower tension too loose.

In sewing where special elasticity is required, as on bias seams or very elastic material, hold the work back slightly, to keep the cloth stretched while being sewed.

To Turn a Corner. Stop the machine with the needle in the cloth, after it has been down and come partly up. Then lift the presser foot, and turn the work in the manner desired, using the needle as a pivot.

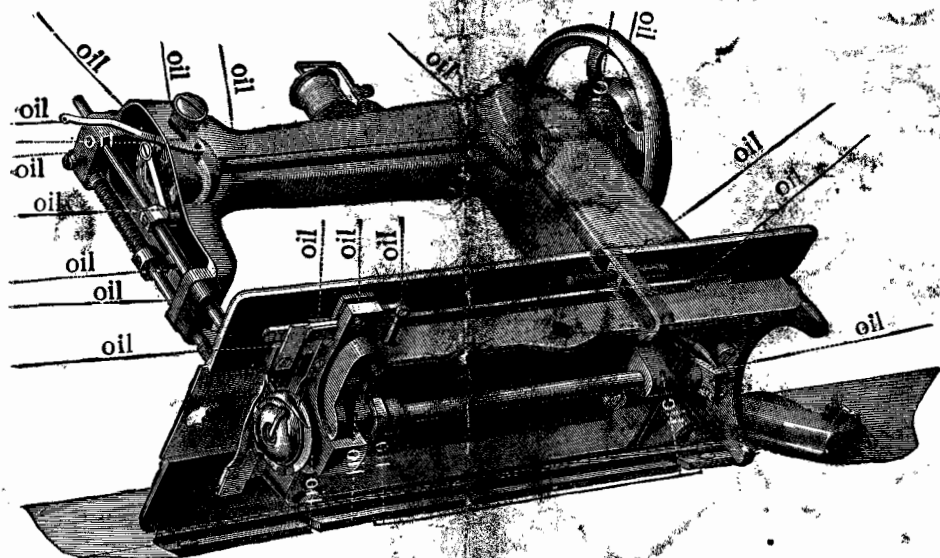
The Belt should be only tight enough to move the machine without slipping. If it is too tight it will make the machine run hard. Should it become too loose, a piece must be cut out near the belt hook, and another hole made, and hooked again.

Causes of the Machine not Working Properly will usually be found in the tension not being properly adjusted, the thread being too coarse or too fine for the needle, the needle and thread too coarse or too fine for the throat plate, or the needle being bent, or blunted. See that the needle is pushed up as far as it will go into the needle-bar, and that it goes perfectly true through the hole in the needle-plate. If it does not, spring the point in the requisite direction till it goes all the way alike.

If the machine misses stitches in running off the back seam, hold the cloth back slightly to keep it straight and prevent its rising up with the needle.

In using slack-twist or uneven silk, should it be frayed or roughened, the needle is too fine, or has a hook upon its point, made by striking the throat plate.

If by operating the machine without cloth when threaded a bunch of thread collects around the bobbin case, **IT MAY EASILY BE REMOVED** by lifting the presser foot and turning the hand-wheel back and forth with the right hand while the thread is drawn out with the left hand.



TRANSPARENT VIEW SHOWING WORKING PARTS. DOTTED LINES RUN TO OIL HOLES AND PARTS TO BE OILED.

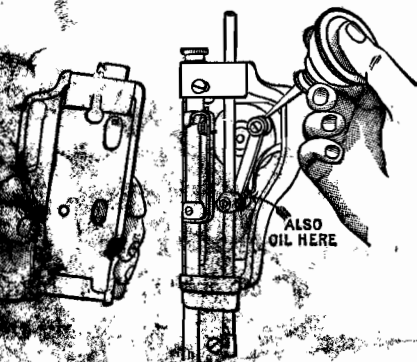
To Oil the Machine.

Use the best Sewing Machine Oil. It can be had of our agents and at our offices. Oil at all places indicated by the dotted lines shown on the cut, above, or wherever there is friction. The parts on the under side of the machine may best be cleaned and oiled by removing the belt and turning the machine back as shown in the cut.

When the needle-bar is at the lowest point, oil through the large oil hole near the needle-bar into the groove for the take-up roller.

To Remove the Face Plate.

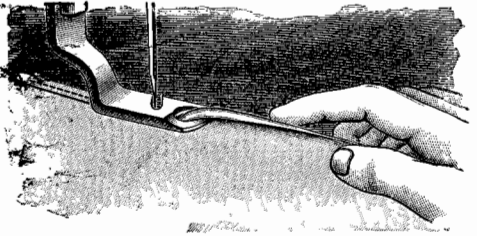
Loosen the large screw near the tension pulley and slide the face plate forward until the large hole will pass over the head of the screw. Wipe off the presser-bar, needle-bar, and other parts. Any one can remove this plate to clean and oil the working parts, as shown in this cut. After replacing the face plate, tighten the screw firmly.



(Never run the machine with the presser-foot down, except when sewing, as it will scratch the foot and dull the feed-points.)

To Hem.

Put the Hemmer in the place of the presser-foot and have the two threads passed back under the Hemmer ready to sew. Turn up the right hand edge of the cloth about $\frac{1}{4}$ of an inch in width and crease it for about an inch or more.



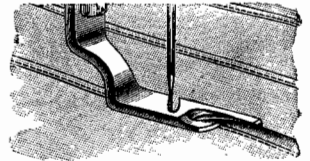
Clip off slightly the turned up corner, pass the turned up edge of the cloth into the opening in the Hemmer to the needle. Lower the presser-bar, see that the cloth is not folded under the right hand side of the Hemmer, take hold of the ends of the two threads, start the machine and pull gently on the threads. If the cloth has been passed far enough into the Hemmer as directed, the threads can be released after two or three stitches are taken, and the hem will be started properly. Guide the cloth so that the edge, as turned over by the scroll, will about reach the left side of the opening in the hemmer. If too much or too little is guided into the hemmer it will leave a raw edge.

The Hemmer Hemming.

WHEN THE PRESSER-BAR thumb screw is loose the hemmer can be **MOVED TO THE RIGHT OR TO THE LEFT**, so that the needle will stitch the proper distance from the edge of the hem or fell.

The Hemmer Felling.

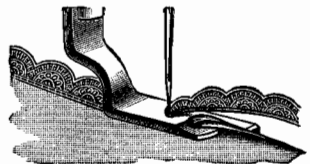
TO FELL WITH THE HEMMER. First sew the two pieces of cloth together as follows: Have the under piece with its edge even with the right hand side of the hemmer, and the upper piece with its edge even with the inside of the long point in front of the Hemmer or far enough to the right of the needle to hold the seam. This will leave the edges when sewed about $\frac{1}{8}$ of an inch apart. Then open and spread the cloth so that the seam will lay flat and the edges will stand upright; then fell them down by passing the raw edges through the hemmer which will turn them under as in hemming. Guide the stitched seam under the left hand edge of the long point in front of the hemmer.



Then open and spread the cloth so that the seam will lay flat and the edges will stand upright; then fell them down by passing the raw edges through the hemmer which will turn them under as in hemming. Guide the stitched seam under the left hand edge of the long point in front of the hemmer.

The Hemmer Hemming and Stitching on Lace—One Operation.

GUIDE THE BACK EDGE of the lace into the opening at the right side of the hemmer, under the needle, and fold the cloth for the hem, as directed.

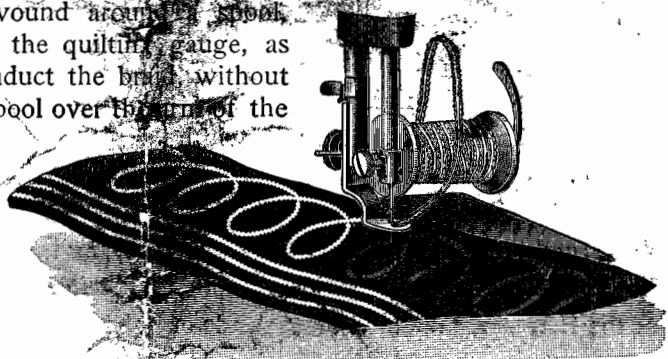


To Use the Braider.

Substitute the Braider for the Presser-Foot.

The braid may be wound around a spool, which can be held by the quilting gauge, as shown in the cut. Conduct the braid without a twist in it, from the spool over the arm of the machine, down through the guide in the braider. The braid may be stitched over a stamped pattern.

Narrow silk braid may be guided down through the needle-hole in the braider.



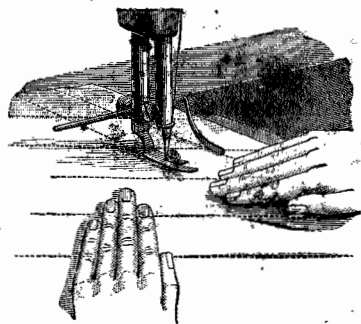
Cut Showing How the Braider is Used.

To Attach the Quilting Gauge.

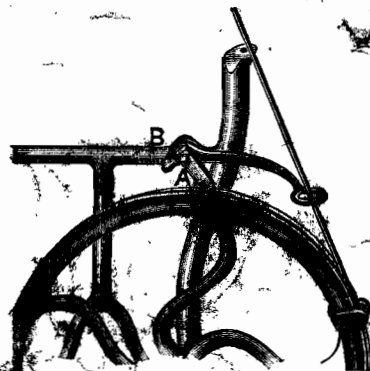
Let down the presser-foot, turn out the presser-foot screw far enough to admit the quilting gauge wire into the notch under the head of the screw, and tighten the screw firmly.

TO QUILT. Let the gauge rest upon the cloth-plate for a guide, while stitching the seam, then raise the gauge enough to let the quilt pass under without touching, and keep the seam last stitched directly under the gauge to insure the seams being equal distance apart.

TO STITCH SHIRT BOSOMS. Set the quilting gauge as far from the needle as you wish to have the stitching from the edge of the fold or plait, and guide the work so that the edge of the plait will follow the gauge.



Quilting or Bosom Gauge



This cut shows the brake A, which prevents the machine from turning in the wrong direction, and the guard which holds the belt so that it will be retracted on the wheel automatically when the treadle is operated. The brake can be put out of action by turning it back until it rests upon the pin.

If the machine is to be sent for repairs, take it off the table, enclose with the hemmer and bobbins, and have the name and address of the owner written plainly and tied to it.